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THE ROYAL CANADIAN INSTITUTE

# STORAGE

THE LEEDS  
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Philosophical and Literary Society.

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THE 93RD ANNUAL REPORT

For 1912-13.





THE  
NINETY-THIRD REPORT  
OF  
THE COUNCIL  
OF THE  
LEEDS  
PHILOSOPHICAL AND LITERARY  
SOCIETY,

AT THE CLOSE OF THE SESSION 1912-1913.

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*READ AT THE ANNUAL MEETING, MAY 20th, 1913.*

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—  
1913.

THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY consists of the following Classes of Members and Subscribers:—

- (1.) ORIGINAL PROPRIETARY MEMBERS (holding £100 Shares), who are entitled to personal admission to the Museum, Library, Lectures, and all other Meetings of the Society, and to two transferable tickets to admit visitors to the Lectures. They are exempt from Annual Subscription.
- (2.) NEW PROPRIETARY MEMBERS (holding £50 Shares), who are entitled to similar personal privileges, and to two transferable tickets. Subscription, £1 1s. per annum.
- (3.) ORIGINAL ORDINARY MEMBERS (holding £3 3s. Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £2 2s. per annum.
- (4.) NEW ORDINARY MEMBERS (holding £20 Shares), who are entitled to similar personal privileges, and to one transferable ticket. Subscription, £1 1s. per annum.

*The following are entitled to personal admission to the Museum, Library, and Lectures, but not to business meetings; nor have they any transferable tickets to admit visitors:—*

- (5.) HONORARY MEMBERS, elected on the recommendation of the Council.
- (6.) SUBSCRIBERS of £1 1s. per annum.
- (7.) SUBSCRIBERS of 7s. 6d. per annum, being Ladies or Young Persons resident with Members, or with Subscribers in Class (6).

A list of shares offered for sale is kept in the office, and information as to price, &c., may be obtained from the Curator.

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*Shareholders must be duly admitted as Members of the Society before they can vote or attend Meetings.*

*All Subscriptions are due in advance.*

*No one can vote or attend Meetings whose Subscription is in arrears (see Rule 5).*

# REPORT OF THE COUNCIL

READ AT THE ANNUAL MEETING 20TH MAY, 1913,

AT THE END OF THE

NINETY-THIRD SESSION, 1912-13.

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The thanks of the Society are due to Sir Francis Fox, Professor A. J. Grant, Professor A. G. Green, Sir Thomas H. Holland, The Very Rev. The Dean of Lichfield, Miss L. A. Lowe, Miss Melian Stawell, The Vice-Chancellor of the Leeds University, and the late Sir William H. White for lectures delivered during the past Session.

The list of Lectures is as follows:—

- 1.—“The Influence of France and Germany on English Education.”  
By M. E. SADLER, C.B., LL.D., D.Litt. *Oct. 22nd, 1912.*
- 2.—“Silks, natural and artificial.” By A. G. GREEN, M.Sc., F.I.C.  
*Nov. 5th, 1912.*
- 3.—“Northumbria after the departure of the Roman Forces.” By The  
Very Rev. THE DEAN OF LICHFIELD. *Nov. 19th, 1912.*
- 4.—“Michael Angelo.” By Miss MELIAN STAWELL. *Dec. 3rd, 1912.*
- 5.—“The New Birth of Germany, 1807-1813.” By A. J. GRANT, M.A.  
*Dec. 17th, 1912.*
- 6.—“Unsinkable Ships.” By SIR WILLIAM H. WHITE, K.C.B., F.R.S.  
*Jan. 14th, 1913.*
- 7.—“The Saving of Winchester Cathedral and other old Buildings.”  
By SIR FRANCIS FOX, M.Inst.C.E. *Feb. 4th, 1913.*
- 8.—“Etruscan Civilisation.” By Miss L. A. LOWE, M.A. *Feb. 18th, 1913.*
- 9.—“The Systematic Study of a Great Earthquake.” By SIR THOMAS  
H. HOLLAND, K.C.I.E., F.R.S. *March 4th, 1913.*
- 10.—“A Plant Collector in the Eastern Alps.” By REGINALD FARRER.  
*March 18th, 1913.*

During the past Session a change was introduced with regard to the hours of meeting, the usual lectures before Christmas being timed for 5.15 p.m., after Christmas for 8 p.m. This change

was made to meet the strongly expressed wishes of many members of the Society, but it was felt that the later hour had been so long the practice that a compromise was desirable as an experiment.

The Council and Officers ventured, therefore, to hope that all members of the Society would help them to make the present Session a success. It was added that at this date Philosophical Societies in many towns had reached a difficult stage in their careers, but it was to be hoped that by adapting itself to the changed conditions of residence and times of leisure, this Society might increase the valuable work for which it was well known in the past.

The earlier hour also furnished an opportunity for the members of the Council and of the Society to meet in the Library before the lecture, but the experiment was discouraging.

The arrangement by which lectures have been given to the members of the Society by the Staff of the University has been continued. The lecture by the Vice-Chancellor on "The Influence of France and Germany on English Education" was followed by two series of evening lectures, one on "Modern Germany" and another on "The Influence of France on England." For the second year in succession a series of University Extension Lectures was delivered at 5.15 p.m. For admission to this series the members of the Society were charged a reduced fee to meet the extra expenses.

The attendances at the University Extension Lectures were not as large as in the previous year.

The lectures were as follows:—

- By A. W. SCHÜDDEKOPF, M.A., Ph.D. "Modern Germany."
- 1.—"Establishment and Constitution of the German Empire." *Oct. 29th, 1912.*
  - 2.—"Administration and Institutions." (Army, Navy, Education, Laws, &c.) *Nov. 12th, 1912.*
  - 3.—"Commercial and Industrial Development." *Nov. 26th, 1912.*
  - 4.—"Political Development." *Dec. 10th, 1912.*
  - 5.—"Religion, Philosophy, Art and Literature." *Jan. 7th, 1913.*

By PAUL BARBIER, *filis*, M.A. "The Influence of France on England."

- 1.—"The influence of French Literature on English Literature." *Jan. 21st, 1913.*
- 2.—"The influence of the French Language on the English Language." *Jan. 28th, 1913.*
- 3.—"French influences upon English Life." *Feb. 11th, 1913.*
- 4.—"Present tendencies in French Literature." *Feb. 25th, 1913.*

#### UNIVERSITY EXTENSION LECTURES.

By FRANK RUTTER, B.A., *Curator of City Art Gallery, Leeds.* "The Evolution of Landscape Painting." (*Lantern Illustrations*).

- 1—"Landscape Backgrounds in Italian Art." *Feb. 6th, 1913.*
- 2.—"The Age of Rubens and Rembrandt." *Feb. 13th, 1913.*
- 3.—"Dutch Landscape after Rembrandt." *Feb. 20th, 1913.*
- 4.—"The Classic Tradition in France and England." *Feb. 27th, 1913.*
- 5.—"The Romantic Spirit." *March 6th, 1913.*
- 6.—"Impressionism and After." *March 13th, 1913.*

The Society helped in the illustration of the lectures on "The Evolution of Landscape Painting" by contributing over forty lantern slides of pictures, several of which were coloured by hand.

The Members and Subscribers are comprised in the following classes:—

	1912.	1913.
Original Proprietary Members (Shares 78) ...	52	55
New Proprietary Members (Shares 65)... ..	64	62
New Ordinary Members (Shares 35) ... ..	36	35
Annual Subscribers of 21s. ... ..	81	69
Annual Subscribers of 7s. 6d. ... ..	81	74
	<u>314</u>	<u>295</u>

The Society has lost by death the Hon. W. A. B. Gellibrand, Tasmania, one of its Honorary Members, and at one time a member of the House of Legislature. Mr. Gellibrand was a generous donor to the collections, and was elected as an Honorary Member in 1871.

By the death of Mr. Henry March the Society has lost an active Member who was always willing to subscribe for the purchase of coins for the collections or for kindred objects. Selections

of his series of Coronation medals, crown pieces, siege pieces and Maundy money were exhibited at various times in the Entrance Hall of the Museum. Mr. March presented "The Numismatic Journal" and other books to the Library.

By death, too, the Society has lost Mr. Arthur Greenwood, an Original Proprietary Member for 24 years, and Mr. Edwin Armistead, a subscriber for 39 years, one of the most regular attendants at its lectures.

The Saturday Evening Lectures continue to attract large audiences.

The following is a list of the Lectures:—

"The Golden West," a three months' trip to California. Edgar Lupton.

"Our personal Names and the Story they tell." Professor Moorman, B.A., Ph.D.

"Air and Earth as Food for Man." Charles Crowther, Ph.D., M.A.

"Pot-holes of Yorkshire." W. Parsons.

"The Continuity of Art." H. Hildesheim, B.A.

Total number of Visitors:—1,352.

The Curator has continued his series of "Christmas Museum Lectures," which were well attended. The subjects were:—

"The 'Gambier-Bolton' Gift of Photographs of Animal Studies."

"Life among Sand-hills."

"Savage Art."

Total number of Visitors:—702.

The number of visitors to the Museum shews a considerable increase on that of last year, the number for 1912-13 being 18,751, for 1911-12, 16,436, the mean of the last ten years being 19,647. This number does not include the visits of the School Children.

It is gratifying to record an increase this year of over 2,000 more visitors to the Museum than last year, as in the Report for several years it has been stated that the interest in modern attractions had a marked influence in reducing the number of visits made to the Society's collections by the general public.



Mr. Alec. Wormald, the Secretary of the Leeds Schools' Museum Scheme, has furnished the following report:—

“On Friday, September 20th, 1912, Mr. Crowther delivered a Lecture to a good gathering of Teachers on “In the Woods,” the choice of the Leeds Schools' Museum Committee for the Twelfth Session of the Scheme.

Alderman W. H. Clarke, Chairman of the Education Committee, presided, and was supported by Mr. C. T. Whitmell, Ex. H.M.I.S. Mr. Dodgson, and the Officers and Committee of the Scheme.

The first lecture to the children took place on Monday, Sept. 23rd, when Mr. P. L. Gray, H.M.I.S., occupied the chair, and suitably addressed the children. Mr. Frank Shepherd, Chairman of the Committee, and the Secretary were also present, and Mr. T. G. West was the Supervisor.

Up to date, 59 lectures have been given and 13,678 scholars in charge of 336 teachers and drawn from 138 departments have visited the Museum.

Five more lectures are yet to be given to about 1,090 children representing 12 departments.

The lectures have been extremely successful. The Supervisors' reports have, in every case, spoken in glowing terms of the lecture and the magnificent slides.

The teachers unite with the Management Committee in thanking Mr. Crowther and Miss Crowther for their splendid work in giving many hours of pleasure derived from the lectures in the Museum, and also when they visit the woods and parks, which have now an added interest.

To give emphasis to their thanks the Committee arranged a dinner, with Mr. Crowther as guest, and a record number of teachers representing all grades assembled to do him honour, under the chairmanship of Ald. W. H. Clarke.”

Mr. A. Dodgson reports as follows on the additional gifts to the Numismatic Collection and the work in this department during the past year:—

Attention has been given to the arrangement of the Coins in the new Cabinet Safe purchased recently by several members of the Council and three or four members and subscribers of the Society. Each of the

33 Trays has been numbered and their contents neatly lettered outside in paint by Miss Vera Crowther to facilitate reference.

The gift of 100 Coins from the Bramley Find has been arranged in chronological order, as well as the Coins from Dustan—acquired by gift last year. The duplicate Roman, Grecian, European, American and English Copper Coins, Tokens, &c., have been displayed in the trays, together with 108 Chinese Coins of the Ta-tsing, or Tartar Dynasty of Seven Emperors.

First	Emperor,	Shun-chi	A.D.	1644-1661	25	examples.
Second	"	Kang-hi	"	1661-1722	18	"
Third	"	Kien-lung	"	1735-1795	9	"
Fourth	"	Kia-king	"	1795-1820	17	"
Fifth	"	Tao-Kwang	"	1820-1850	28	"
Sixth	"	Hum-fing	"	1850-1861	4	"
Seventh	"	Tung-chi	"	1861-1875	7	"

The following donations have been received and added to the Collection :—

Five of the earliest and rarest Chinese Coins known to us, dating from B.C. 770-255.

No. 1 is the Ancient Pu Coin, of "Liang," the Modern Kai-Feng-Fu, in Honan.

„ 2 „ „ „ „ „ An I. „ „ Hsia Hsien, in Shensi.

„ 3 „ Knife Coin of the City of Ming, State of Chao, B.C. 481-255.

., 4 is a Pu Coin, issued by Wang Mang, A.D. 9-23.

" 5 " " " " " " " A.D. 9-23.

Four of the above were presented by Mr. H. Crowther, the Curator, and are a valuable addition to the Coin Collection.

Mr. G. D. Lumb has presented—

A Roman Denarius of Trajan, A.D. 98-117.

„ „ „ „ Sabina w. of Hadrian, died A.D. 137.

., Greek Stater (Silver) of Alexander the Great.

„ „ Bronze Coin of Paestum, B.C. 268-289.

„ „ „ „ not identified, probably Corcyra or Sidon.

” ” ” ” ” Rev. a Cornucopia.

Mr. R. H. Brown has presented a set of Guernsey Doubles in Mint condition struck in 1911, viz.- one  $\frac{1}{2}$ , 1, 2, 4 and 8 doubles, together with specimens of bronze coinage to complete sets of recent British issues.

The Council is indebted to Mr. T. Pickersgill for help in assisting in the arrangements of the Coin Cabinet and for gifts of several coins needed to complete certain recent issues of coinage.

By purchase, a Pahang "Hat" Coin, a Boat Coin of the Shan States, and a "Manilla" from the East Coast of Africa, similar to those found in Ireland, and also worn as a bracelet or wrist ornament.

For determination and valuation about 600 coins, tokens and medals from various places have been brought to the Museum.

The Council gratefully acknowledge the following gifts :—

From Mr. E. Hawkesworth, Crossgates, Fossils from Cayton Gill Beds, Marine Deposits in the Millstone Grit, near Masham, Fossils from a Marine Band in the Coal Measures, passed through when sinking the New Askern Colliery, Fossils from a Marine Band in the Millstone Grit, below the Cayton Gill Beds, passed through by trial hole in Colsterdale.

By Dr. and Mrs. Eddison, a Collection of Brazilian Bird Skins, Shells of Mollusca, Madrepor Corals, Fossils and Minerals.

By Mr. Frank Somers, Leeds, two perfectly prepared Skulls of the Horse, one that of the ordinary horse, the other that of the Shire horse.

By Mr. E. Brown, Collingham, Specimens in the flesh of Weasel, Stoat, Royston Crow, Sparrow Hawk, Little Auk. The last was killed by coming in contact with a telegraph wire, during the gale of April last year.

By Mr. Francis G. Exell, Bath, a Series of Butterflies and other Insects, and of Caterpillars preserved in Spirit gathered by the donor at Wathen, Thysville, in the Belgian Congo Cataract Region, 300 miles inland.

By Mr. J. W. Gaunt, Bramley, Specimens of the Ground Parrot of New Zealand, and of the Australian Wattle-bird in glazed cases.

By Mrs. Herbert Crawford, Roundhay, Specimens of the Albatross, Snowy Owl, Tawny Owl, Little Owl and Scops Owl in glazed cases.

By Mr. R. Gawler, Leeds, the Skull of a Woman dug up from a Plague Pit in London.

By Messrs. Kitson & Co. Ltd., Airedale, a series of prepared slips of wood to illustrate in the Museum, for the Children's Museum Scheme, the kinds of timber used by various trades in the City.

By Mr. R. H. Brown, Headingley, sections of trees illustrating their structure, and of specimens of the various barks of trees, displayed in cases for the Children's Museum Scheme.

By Mr. J. Sumner Marriner, Leeds, a collection of British Flowering Plants and Ferns and of Swiss Flowering Plants.

By Mr. M. Hilkovitz, Johannesburg, Man's Beaded Blanket Dress and Pipes, and Beaded Blanket Dress, Skirt and Ornaments of Woman of Fingo tribe. The Fingoes are a relic of a former Kaffir tribe which were driven by conquest to serve as slaves in the Kosa Country, later liberated by England, and settled east of the Great Fish River.

By Mr. Isaac Featherstone, Shipton, two small Rubbing-stones, found when ploughing in the land near Market Weighton.

By Mr. R. T. Wildman, Long Preston, an old Fire Blower and a Holster and Flint Pistol.

By Mr. Alfred Barran, a series of objects from the Congo District, including Executioner's Knife, Mousembe Fringe Dress, Kasai Cup.

The Lecture "In the Woods" given under the Museum Scheme is illustrated by forty-two cases of Special Exhibits, which show the "Structure of Wood," with explanations, "Woods used in making Furniture and in Dyeing," "Woods used in various Trades in the City," "Woods of Familiar Trees," Woods of Cone-bearing Trees," "Cones of Trees," "Barks of Trees," "Herbs of the Undergrowth," "Drawings of Plant Structure." Two cases are devoted to the display, in glass jars, of "Seeds and Seedlings of Trees," and "Poisonous Plants," preserved in formalin. Other cases contain examples of "Injurious Insects," "Fungi," and "Animals destroyed as Vermin."

A new case has been fixed in the north bay of the Bird Room, and in it is displayed a series of Chicks of Woodland Birds. The exhibit has excited considerable interest.

The Birds' Nests acquired last year have been arranged in the Bird Gallery, and a special case of the Nests more recently added to the collections of some of the smaller Birds which are found in the woods, is exhibited in the Bird Room.

Selections from the "Gambier Bolton" gift of photographs of Animals are exhibited in two wall cases on the Staircase.

The re-arrangement and display of the Stone Implements are approaching completion. Properly to free the specimens from the tarry substances which accompany dust, it has been found necessary to wash each individual specimen in a weak solution of ammonia.

A series of Pen and Ink Drawings is being prepared and put in the cases to illustrate the Structure of Worms, Sea-urchins, Starfish and other Invertebrates.

An increased use is being made of the Museum by the outside public. To them considerable time is given in answering inquiries on all kinds of subjects that relate to the Collections. The presence of injurious insects in gardens is followed in many cases by inquiries at the Museum. The artists of the printing trades, who come to make drawings of specimens, and teachers selecting certain types for lessons, are specially helped. The Students of the Medical School continue to make regular visits to examine the specimens, the Students of the City Art School attend frequently in batches to make drawings of the Animals and of the Greek, Roman and Egyptian Pottery. Numerous visits are being made by Scholars (in charge of Teachers) from Schools outside the City, and from Secondary Schools. At the request of a teacher of English History a series of English Pennies from the time of the Conqueror is being displayed in the Coin Case.

No further communication has yet been received from the Town Clerk in relation to a joint arrangement in the interests of the Public and of the Society, as suggested in a letter from him dated April 13th, 1905.

# SUNSHINE AT LEEDS IN 1912.

The observations recorded below were made by Jordan's Photographic Sunshine Recorder at the following stations in Leeds:—

1. The Museum of the Philosophical and Literary Society, situate in the centre of the city; elevation above the sea, 131 feet. Recorder—Mr. HENRY CROWTHER, Curator.
2. Lawnswood Cemetery, Adel, 4 miles N.W. from the centre of the city; elevation, 475 feet; on the fringe of the city. Recorder—Mr. S. R. DVSON.

The Monthly Summary is appended:—

Months.	Stations.	Hours of sunshine registered.	Percentage of possible Duration.
JANUARY .. .. .	1	10.10	4.21
	2	29.55	12.40
FEBRUARY .. .. .	1	47.05	17.11
	2	64.40	24.13
MARCH .. .. .	1	92.15	25.20
	2	107.30	29.32
APRIL .. .. .	1	181.00	43.38
	2	200.50	43.03
MAY .. .. .	1	122.25	24.53
	2	167.50	34.07
JUNE .. .. .	1	135.45	26.49
	2	153.40	30.22
JULY .. .. .	1	117.00	23.07
	2	130.50	25.51
AUGUST .. .. .	1	106.10	23.42
	2	125.10	27.30
SEPTEMBER .. .. .	1	122.40	32.47
	2	140.05	37.30
OCTOBER .. .. .	1	84.45	26.29
	2	103.00	34.11
NOVEMBER .. .. .	1	41.30	16.40
	2	50.30	20.16
DECEMBER .. .. .	1	18.15	8.13
	2	23.50	10.44

## SUMMARY FOR THE YEAR.

	Hours recorded.		Difference from mean of ten years in hours.		Percentage of possible duration.
Museum ..	H. M. 1,080 0 ..	H. M. 155 18 ..	24.45		
Lawnswood ..	1,283 40 ..	170 14 ..	29.04		
26.7 per cent. mean for 1912.		28.7 per cent. mean for 1907.			
36.9 .. .. .	1911.	30.3 .. .. .	1906.		
31.6 .. .. .	1910.	30.7 .. .. .	1905.		
29.9 .. .. .	1909.	31.2 .. .. .	1904.		
29.2 .. .. .	1908.	32.2 .. .. .	1903.		

Or 30.74 per cent. mean for ten years.

The Meteorological Office publishes the following Records of Sunshine for 1912, as observed at stations taken as representing specified districts:—

Stations.	Number of Hours.	Difference from mean, hours.	Percentage of possible duration.
Scotland, N. (Stornoway, &c.) .. .. .	1,003 ..	-106 ..	23
" E. (Aberdeen, Marchmont) .. .. .	1,023 ..	-307 ..	23
" W. (Glasgow; Douglas, Isle of Man) ..	1,153 ..	-207 ..	26
England, N.E. (Durham, York) .. .. .	1,114 ..	-332 ..	25
" N.W. (Stonyhurst, Blackpool, Llandudno) ..	1,207 ..	-175 ..	27
" Mid. (Cirencester, Oxford, &c.) .. .. .	1,127 ..	-275 ..	26
" S. (London, Hastings, Southampton, &c.) ..	1,437 ..	-160 ..	33
" E. (Hillington, Geldeston, Cambridge) ..	1,375 ..	-202 ..	31
" S.W. (Pembroke, Falmouth, Plymouth, &c.) ..	1,261 ..	-299 ..	29
Ireland, N. (Armagh, Markree Castle) .. ..	1,108 ..	-172 ..	25
" S. (Dublin, Parsonstown, Valentia) .. ..	1,161 ..	-286 ..	26
Channel Islands (Jersey, Scilly, &c.) .. ..	1,602 ..	-295 ..	37

## SUMMARY.

28.1 per cent. mean for United Kingdom, 1912.	32.2 per cent. mean for United Kingdom, 1907.
37.4 .. .. . 1911.	35.3 .. .. . 1906.
32.1 .. .. . 1910.	33.3 .. .. . 1905.
34.2 .. .. . 1909.	32.8 .. .. . 1904.
33.0 .. .. . 1908.	30.8 .. .. . 1903.

or 32.9 per cent. mean for ten years.

SUMMARY OF METEOROLOGICAL OBSERVATIONS TAKEN AT THE  
PHILOSOPHICAL HALL, AND AT LAWNSWOOD, DURING THE YEAR 1912.

1912.	Mean Height of Barometer (inches).	Mean Temperature of Air (degrees).	Amount of Rainfall.	
			Museum (inches).	Adel (inches).
January ... ..	29.81	39.2	3.67	4.47
February ... ..	29.52	42.4	1.94	2.74
March ... ..	29.52	46.1	3.19	3.91
April ... ..	30.04	51.3	0.17	0.26
May ... ..	29.88	55.8	3.14	2.59
June ... ..	29.68	59.4	4.54	4.88
July ... ..	30.01	63.1	4.74	4.90
August ... ..	29.61	57.7	4.59	4.53
September ... ..	30.05	54.5	1.21	1.39
October ... ..	29.79	48.8	2.53	3.02
November ... ..	29.82	45.0	1.78	2.09
December ... ..	29.66	44.2	2.03	2.67
Yearly Means ...	29.89	50.7	33.53	37.45

EXTREMES FOR THE YEAR 1912.

Greatest Barometric pressure—30.53 inches on October 4th, the temperature of the mercury being 59°; Least pressure—28.79 inches on March 18th, the temperature of the mercury being 60°.

Greatest degree of Heat, indicated by the thermometer in the shade—85° on July 15th; Minimum—18° on February 5th.

Greatest fall of Rain (during 24 hours)—1.25 inches on October 26th. Average yearly Rainfall at the Museum for the ten years 1903—1912 is 28.44 inches.

PERCENTAGE OF SUNSHINE AT THE MUSEUM, COMPARED WITH  
THAT RECORDED AT ADEL, ADEL BEING RECKONED AS 100.

1897 ... ..	83.5 per cent.	1905 ... ..	87.2 per cent.
1898 ... ..	79.1 "	1906 ... ..	87.5 "
1899 ... ..	82.8 "	1907 ... ..	83.2 "
1900 ... ..	78.0 "	1908 ... ..	80.6 "
1901 ... ..	85.5 "	1909 ... ..	78.7 "
1902 ... ..	82.4 "	1910 ... ..	83.9 "
1903 ... ..	87.5 "	1911 ... ..	84.5 "
1904 ... ..	87.7 "	1912 ... ..	84.1 "

The adopted Mean Temperature of the Air is the mean of the following four daily readings:—(a. and b.) Dry Bulb Thermometer read at 10 a.m. and 4 p.m.; (c. and d.) Maximum and Minimum Thermometers, all the instruments in a screen.

The Hall is situate at 1° 32' 45" W., and 53° 47' 51" N.

The Bench Mark at the corner of the Philosophical Hall is 131.8 feet above sea level, and 10 inches above the pavement. The cistern of the barometer is 4.3 feet, the thermometers are 42 feet, and the rain-gauge is 45 feet above the Bench Mark.

# LEEDS PHILOSOPHICAL AND LITERARY SOCIETY.

## Statement of Receipts and Payments for the year ending 30th April, 1913.

RECEIPTS.		£	s.	d.	PAYMENTS.		£	s.	d.	£	s.	d.
To Annual Subscriptions, viz.:-					By Balance due to Treasurer, 30th April, 1912					270	1	6
" New Proprietary Members	...	61	19	0	" Repairs	...				18	10	6
" Ordinary Members	...				" Taxes	...	25	16	8			
" New Ordinary Members	...	34	13	0	" Rates	...	30	16	5			
" Subscribers, of 21s.	...	72	9	0	" Insurance	...	14	5	6			
" Subscribers, of 7s. 6d.	...	27	7	0						70	18	7
" Arrears	...	2	2	0	" Coals	...						
				198	" Coke	...	18	12	0			
" Fees for Hall	...	236	13	0	" Electric Lighting	...	14	15	6			
" Visitors' Fees	...	86	0	8	" Gas	...	16	15	10			
" School Children	...	61	9	0	" Water	...	6	13	6			
				384	" Cleaning	...	3	17	7			
" Donations—					" Cleaning	...	16	0	2			
" Safe	...			2	" Distemping Lecture Hall, &c.	...				76	14	7
" Sale of Guides	...	5	5	5	" Furniture and Fixtures	...				13	5	6
" Sundries	...	11	17	1	" Salaries and Wages	...	269	16	0	25	2	4
				17	" Collector	...	5	0	0			
" Extension Lectures...	...	32	0	6	" Auditors	...	2	2	0			
" Midland Railway Dividend	...	47	7	10						276	18	0
" Due to Treasurer, 30th April, 1913	...	302	8	0	" Library and Collections	...						
					" Postages	...	33	5	8			
					" Advertising and Printing	...	15	0	0			
					" Lectures, Expenses of	...	60	14	8			
					" Extension Lecturer's Fees	...	56	0	7			
					" Porter's Livery	...	22	1	0			
					" Telephone	...	5	9	0			
					" Sundries	...	10	0	0			
					" Sundries	...	15	15	7			
					" Commission and Interest	...				218	6	6
										13	14	6
										£983	12	0

We have examined the Books and Vouchers of the Leeds Philosophical and Literary Society, and find the above to be a correct abstract of the same.

LEEDS, June 6th, 1913.

BEEVERS & ADGIE,  
CHARTERED ACCOUNTANTS.

### Capital Account.

£2,013 1s. 2d. Preference 2½ per cent. Midland Railway Stock.



LIST OF DONATIONS AND ADDITIONS  
TO THE  
SOCIETY'S MUSEUM AND LIBRARY.

1912-1913.

Donors marked thus † are Members of or Subscribers to the Society.

ZOOLOGY.

- |  |                                    |
|--|------------------------------------|
| Skin of Fox-bat— <i>Pteropus</i> .....   | } †Dr. and Mrs. Eddison.           |
| Skins of Brazilian White-faced Tama-<br>tia, Pompadour Chatterer, White<br>Chatterer, White-throated Climber,<br>Least Climber, Lesser Yellow Head-<br>ed Woodpecker, Collard Finch,<br>Rufus Crowned Ant-thrush and of<br>Mexican partridge ..... |                                    |
| Shells of Mollusca, including species<br>of the following genera:—<br><i>Voluta, Murex, Chama, Cymba,</i><br><i>Harpa, Conus, Tridacna, Pteros-</i><br><i>ceros, Spondylus, Nautilus</i> and<br>others .....                                       |                                    |
| Specimens of Reef-building Corals,<br><i>Madrepora, Astraea</i> , and others...  |                                    |
| Section of <i>Conus virgo</i> .....  |                                    |
| Two glazed cases, containing Austra-<br>lian Wattle-birds and New Zealand<br>Ground Parrot.....  | } Mr. J. W. Gaunt, Bramley.        |
| Three glazed cases, containing Alba-<br>tross, Snowy, Scops, Tawny and<br>Little Owls .....  |                                    |
| Specimens in the flesh of Weasel,<br>Stoat, Royston Crow, Sparrow<br>Hawk, &c. ....  | } Mr. E. Brown, Collingham.        |
| Specimen of Little Auk, killed at<br>Collingham .....  |                                    |
| For description see page 9.  |                                    |
| A series of Insects from Wathen,<br>Belgian Congo Cataract Region ...  | } Mr. Francis G. Exell, Bath.      |
| For description see page 9.  |                                    |
| Prepared Skulls of a Shire Horse and<br>of ordinary Horse .....  | } Mr. Frank Somers,<br>Chapeltown. |

## GEOLOGY.

Fossils from Cayton Gill Beds, near Masham, from Marine Band in Coal Measures, New Askern Colliery and from Marine Band in the Millstone Grit, Colsterdale... } †Mr. Edwin Hawkesworth, Crossgates.

For description see page 9.

Brachiopods and Corals from the Carboniferous Limestone; *Pecten* and *Ammonite* from the Greensand } †Dr. and Mrs. Eddison, Adel.

Portion of *Rhizodus* (*Megalichthys*) from the Lower Carboniferous Limestone of Burdiehouse, near Edinburgh ..... } †Mr. Aquila Dodgson, Headingley.

Vertebræ and teeth of Sharks, tympanic bones of Whales, *Xanthopsis* and other fossils from the Pliocene deposits of Felixstowe..... } Mr. Edward C. Ash, Felixstowe.

## MINERALOGY.

Specimens of Galena, Iron Pyrites, Chalcopyrites, Agate, Quartz crystals, Fluorspar, Satinspar ..... } †Dr. and Mrs. Eddison, Adel.

Large nodule of Haematite Iron Ore, Cumberland.. ..... } Mr. T. J. Bellingham, Chapeltown.

## BOTANY.

A series of sections of Timber used in various trades ..... } Messrs. Kitson & Co. Ltd., Airedale, Hunslet.

A series of sections of Trees showing structure ..... } †Mr. R. H. Brown, Headingley.

A collection of British Flowering Plants and Ferns and of Swiss Flowering Plants ..... } Mr. J. Sumner Marriner, Leeds.

## ETHNOLOGY.

Man's Beaded Blanket dress and pipes..... } Mr. Maurice Hilkovitz, Johannesburg.  
Woman's Beaded Blanket dress and ornaments of the Fingo tribe..... }

For description see page 10.

A series of objects from the Congo District including Executioner's Knife, Mousembi Fringe Dress, Kasai Cup, Chumbisi Basket, Arrows.....	†Mr. Alfred Barran, Headingley.
Fire Blower and Holster with Flint Pistol ...	Mr. R. T. Wildman, Long Preston.
Polynesian Fish-hook, Necklace of Olive Shells and Armlet of portions of Ormer Shells .....	Mr. J. Sumner Marriner, Leeds.
Turkish beaded Pouch and Moorish leather Sandal .....	
Earthenware Incense burner, South America .....	Miss Alice Fretwell, Leeds.
Skull of a Woman dug from a plague pit in London.....	Mr. R. Gawler, Leeds.
Skull of a Man found at a considerable depth when excavating for the Victoria Docks, Hull, 1905 .....	Mr. Fred Smith, Leeds.

### ARCHÆOLOGY.

Two quartz pebble Rubbing-stones, probably for polishing stone implements, found near Market Weighton	Mr. Isaac Featherstone, Shipton.
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### NUMISMATICS.

Six Greek and Roman Coins.....	†Mr. G. D. Lumb, Leeds.
For description see page 8.	
Four Chinese Coins .....	Mr. H. Crowther.
For description see page 8.	
A set of five Guernsey doubles, mintage 1911 .....	†Mr. R. H. Brown, Headingley.
First Brass Roman Coin of Domitian found at a depth of 9 inches when digging for Arcadian Pavilion, Harehills, 1913 .....	Mr. Harold Brand, Harehills.
A series of Bronze Coins of Victoria and Edward VII .....	Mr. T. Pickersgill, Leeds.
Silver 2d. and 1½d. Victoria .....	Mr. R. T. Wildman, Long Preston.

## LIBRARY.

Catalogue of Lepidoptera Phalænæ, } Vols. X and XI .....	The Trustees of the British Museum (Natural History).
Catalogue of Chiroptera, Vol. I..... }	
Contributions to Canadian Biology, } 1906-1910 .....	Prof. E. E. Prince, Ottawa.
Brazil in 1912 .....	
	Mr. J. C. Oakenfull, London.

## PERIODICALS.

## WEEKLY.

Nature .....	Purchased.
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## MONTHLY.

Annals and Magazine of Natural } History..... }	Purchased.
Geological Magazine .....	
Journal of the Chemical Society.....	Purchased.
Monthly Notices of the Royal Astro- } nomical Society..... }	The Society.
Philosophical Magazine and Journal } of Science..... }	
Journal of the Anthropological Institute	Purchased.

## BI-MONTHLY.

Journal of the Royal Microscopical } Society..... }	The Society.

## QUARTERLY.

Quarterly Journal of Microscopical } Science..... }	Purchased.
Quarterly Journal of Geological Society	
	The Society.

## ANNUALLY AND OCCASIONALLY.

Philosophical Transactions.....	Purchased.
Proceedings of the Royal Society ...	The Society.
Proceedings of the Royal Institution } of Great Britain .....	The Institution.
Publications of the Ray Society .....	
	Purchased.

British Association Report.....	The Association.
Greenwich Observations.....	The Astronomer-Royal.
Memoirs of the Royal Astronomical Society .....	The Society.
Radcliffe Astronomical and Meteor- ological Observations .....	Radcliffe Trustees.
British Rainfall.....	Purchased.
Monograph of the Palæontographical Society .....	Purchased.
Proceedings of the Yorkshire Geological Society .....	The Society.
Transactions of the Leeds Astronomi- cal Society .....	The Society.
Transactions of the Leeds Geological Association .....	The Association.
Proceedings of the Liverpool Geo- logical Society.....	The Society.
Journal of the Liverpool Geological Association .....	The Association.
Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne.....	The Tyneside Naturalists' Field Club.
Proceedings of the Birmingham Philo- sophical Society .....	The Society.
Annual Report of the Yorkshire Philosophical Society .....	The Society.
Transactions of the Leicester Literary and Philosophical Society .....	The Society.
Report of the Committee of Leicester Town Museum .....	The Museum.
Report of the Meteorological Depart- ment of the Borough of Southport.	The Meteorological Observer.
Annual Report of the Urban Sanitary Authority of the City of Leeds.....	Sanitary Department.

Report of the Bristol Museum .....	The Museum Committee.
Report of the Reading Museum .....	{ The Free Library and Museum Committee.
Proceedings of the Liverpool Literary and Philosophical Society .....	{ The Society.
Annual Report and Proceedings of the Liverpool Science Students' Association .....	{ The Association.
Memoirs and Proceedings of the Man- chester Literary and Philosophical Society .....	{ The Society.
Reports of the Manchester Museum Handbooks        do.        do.	{ The Keeper.
Annual Report of the Sheffield Literary and Philosophical Society	{ The Society.
Annual Report of the Royal Cornwall Polytechnic Society.....	{ The Society.
Report of Associated Architectural Societies .....	{ The Association
Proceedings of the Royal Society of Edinburgh .....	{ The Society.
Transactions        do.        do.	{
Transactions of the Edinburgh Geo- logical Society.....	{ The Society.
Proceedings of the Glasgow Philoso- phical Society .....	{ The Society.
Scientific Proceedings of the Royal Dublin Society.....	{ The Society.
Scientific Transactions        do.	{
Transactions of the Royal Irish Academy .....	{ The Academy.
Proceedings        do.        do.	{
Journal of the Royal Geological Society of Ireland .....	{ The Society.

Annual Report and Proceedings of the Belfast Naturalists' Field Club	} The Club.
Cape Meridian Observations .....	} Cape Astronomer-Royal.
Report of H.M. Astronomer at the Cape of Good Hope to the Secretary of Admiralty .....	
Report of Australasian Association for the Advancement of Science .....	} The Association.
Journal and Proceedings of the Royal Society of New South Wales .....	} The Society.
Journal of the Royal Geographical Society of Australasia .....	} The Society.
Wealth and Progress of New South Wales .....	} The Agent-General.
Records of the Geological Survey of New South Wales .....	} The Surveyor.
Memoirs of the Geological Survey of New South Wales .....	
Annual Report and Papers of the Department of Mines and Agricul- ture, New South Wales ..	} The Department.
Records of the Australian Museum Report of the Trustees of the Austra- lian Museum.....	} The Trustees.
Proceedings of the Royal Society of Queensland .....	} The Society.
Queensland Agricultural Journal .....	} The Society.
Annals of the Queensland Museum...	} The Trustees.
Transactions and Proceedings of the New Zealand Institute .....	} The Institute.
Journal Royal Anthropological Society of Australia .....	} The Society.
Papers and Proceedings of the Royal Society of Tasmania .....	} The Society.

Proceedings and Transactions of the Royal Society of Canada .....	} The Society.
Proceedings of the Canadian Institute Annual Report do. Transactions do.	} The Institute
Proceedings and Transactions of the Nova Scotian Institute of Natural Science .....	} The Institute.
Annual Report, Hamilton Public Library, Ontario, Canada .....	} The Librarian.
Journal and Proceedings of the Hamil- ton Association .....	} The Association.
Geological and Natural History Survey of Canada .....	} Department of the Interior.
Annual Report and Papers—do. ....	
Contributions to Canadian Palæon- tology .....	
Bulletin of the Natural History Society of New Brunswick.....	} The Society.
Publications of the Royal Swedish Academy of Sciences.....	} The Academy.
Papers of the Royal University of Norway .....	} The University.
Bulletin of the Geological Institution of the University of Upsala .....	} The Institution.
Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhand- linger.....	} Royal Danish Society of Sciences.
Bulletin, Société Impériale, Moscow...	} The Society.
“Leopoldina” Amtliches organ der Kaiserlichen, Leopoldino-Carolini- schen Deutschen Akademie der Naturforscher .....	} The Academy.
Mittheilungen der Kais. Königl. Geo- graphischen Gesellschaft in Wien ...	} The Society.
Memorias de la Sociedad Científica Mexico .....	} The Society.



“ Boletin Mensual ” Observatorio Meteorologico-Magnetico Central de Mexico .....	} The Editor.
Anuario del Observations Astrón- omico Nacional Mexico.....	} The Astronomer.
Boletin del Observatorio Astronómico Nacional de Tacubaya .....	} The Observer.
Transactions of the American Philo- sophical Society .....	} The Society, Philadelphia.
Proceedings do.	
United States Geological Survey, Annual Report.....	} The Department, Wash- ington.
Contributions to American Ethnology.	
United States Geographical and Geo- logical Survey .....	
United States Department of Agricul- ture, Publications of .....	} The Department, Wash- ington.
Report of the Smithsonian Institution Smithsonian Miscellaneous Collections Smithsonian Contributions .....	} The Institution, Washing- ton.
Annual Reports of the Bureau of Ethnology .....	
Miscellaneous Publications of the Bureau of Ethnology .....	
Proceedings of United States National Museum .....	
Report do. do.	} The Museum, Washington.
Bulletins do. do.	
Memoirs of the National Academy of Sciences U.S.A. ....	} The Academy, Washing- ton.
Transactions of the Academy of Science of St. Louis .....	} The Academy.
Proceedings of the Academy of Natural Sciences of Philadelphia...	} The Academy.
Papers do. do.	
Transactions of the Wagner Institute of Science, Philadelphia.....	} The Institute.

Proceedings of the American Academy of Arts and Sciences.....	} The Academy, Boston.
Transactions of the Botanical Society of America .....	} The Society, St. Louis.
Botanical Society of America .....	Society, Cornell University.
Transactions of the Wisconsin Academy of Sciences, Arts, and Letters .....	} The Academy, Madison.
Bulletins of the Wisconsin Geological and Natural History Society.. ..	} The Society.
Memoirs of the National Academy of Sciences, Washington.....	} The Academy.
Bulletins of the Philosophical Society of Washington.....	} The Society.
Proceedings of the Davenport Acad- emy of Sciences .....	} The Academy.
Transactions of the Wagner Free Institute of Science, Philadelphia ...	} The Institute.
Annual Report, Transactions, and Mis- cellaneous Papers of the Historical and Scientific Society of Manitoba	} The Society.
Proceedings of the Boston Society of Natural History, U.S.A. ....	} The Society.
Memoirs do.	
Bulletins of the Essex Institute, U.S.A.	The Institute, Salem.
Annual Report of the Curator of the Museum of Comparative Anatomy, Harvard College .....	} The College, Cambridge.
Annual Report of Harvard College	
Missouri Botanical Gardens Report...	The Director, St. Louis, Mo.
Brooklyn Institute of Arts and Sciences .....	} The Institute, Brooklyn, N.Y.
Harvard University Catalogue .....	The University.
Annual Report of the Chicago Academy of Sciences.....	} The Academy.
Special Publications .....	

Transactions of the Astronomical Observatory of Yale University ...	} The University, Newhaven.
Annual Report do.	
Report of the President of Yale University .....	
Catalogue do. do.	
Journal of the Elisha Mitchell Scientific Society .....	} The Society, Chapel Hill.
Tufts College Studies.....	} The College.
Transactions of the Meriden Scientific Association .....	} The Association.
Bulletins of the Buffalo Society of Natural Sciences.. ..	} The Society, Buffalo, N.Y.
Bulletins of the University of Montana, Missoula .....	} The University.
Publications of Colorado College .....	} The College, Colorado Springs.
Philippine Journal of Science .....	} Bureau of Science, Govern- ment of the Philippine Islands.
University of Virginia, Publications and Bulletin of the Philosophical Society }	The University, Charlottes- ville.
Bulletin of Minnesota School of Mines Contributions Geological and Natural History Survey of Minnesota ... ..	} The University of Minneapolis.
The Museum News ... ..	} The Brooklyn Institute of Arts and Sciences.
Transactions of Connecticut Academy of Arts and Sciences .....	} The Academy.
Bulletins of the University of Minne- sota .....	} The University, Minneapolis.

# LIST OF PRESIDENTS

SINCE

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1911-12.	C. T. WHITMELL, M.A., B.Sc., F.R.A.S.
1912-13 : 1913-14.	P. FRY KENDALL, M.Sc., F.G.S.

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1913-1914.

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- |        |   |   |
|--------|---|---|
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| 52     | Arnold, Mrs. Emily R.                             | 2, North Hill Road, Headingley.         |
| 75     | Bagshawe, Bernal                                  | Red House, Chapel Allerton.             |
| 49     | Baines, Mrs. Arthur                               | The Heath, Adel.                        |
| 5      | Baines, Mrs. Herbert S.                           | 10, Richmond Road, Headingley.          |
| 63     | *Barr, Frederick Horatio                          |   |
| 6      | Barran, Sir John N., Bart.,<br>M.A., M.P.         | Sawley Hall, Ripon, Yorks.              |
| 22, 24 | *Beckett, W. (2 shares)                           |   |
| 44     | Bidder, Maurice McClean                           | Moorfield Lodge, Headingley.            |
| 18     | Billbrough, Alfred                                | 15, Beech Grove Terrace.                |
| 8      | *Binks, Benj., Junr.                              |   |
| 45     | Braithwaite, James, M.D.                          | Clarendon Road.                         |
| 9      | Broadhead, Wm. Edward                             | St. Michael's Terrace, Head-<br>ingley. |
| 11     | *Brown, James                                     |   |
| 13, 14 | *Calverley, Edmd. (2 shares)                      |   |
| 15     | Clark, Edwin Kitson, M.A.,<br>F.S.A., M.Inst.C.E. | Meanwoodside, Headingley.               |
| 19     | Close, James William                              | Greek Street.                           |
| 26     | Cousins, William James                            | Greek St. Chambers, Park Row.           |
| 39     | Crawford, George Frederic                         | 17, East Parade.                        |
| 23     | *Dibb, Mrs. Elizabeth                             |   |
| 1      | Dodgson, E. Oldroyd                               | Southleigh, Headingley.                 |
| 25     | Eddison, John Edwin, M.D.                         | The Lodge, Adel.                        |
| 55     | Eddison, Mrs. J. E.                               | The Lodge, Adel.                        |
| 28     | *Empson, Christopher                              |   |
| 29, 48 | Ford, J. R., (2 shares)                           | 61, Albion Street.                      |

\* Deceased Members.

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 61 Greenhow, Wm. T. . Newton Cottage, Chapel-Allerton  
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 50 Hollis, Walter Dawson . 3, Park Place.  
 7 Holmes, Arthur Thomas . 4, East Parade.  
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 20 Knaggs, Robert Lawford,  
     M.A., M.D., M.C. . 27, Park Square.  
 43 Lancaster, William Thomas 7, Clarendon Place, Mount  
     Preston.  
 34 Lumb, George Denison,  
     F.S.A. . 31, Lyddon Terrace.  
 77 Lupton, Arthur Michael . Spring Wood, Roundhay.  
 57 Lupton, Charles, M.A. . Carr Head, Roundhay.  
 53 Lupton, Fras. Martineau,  
     M.A. . Rockland, Newton Park.  
 56 Lupton, Sydney, M.A. . 102, Park Street, Grosvenor Sq.  
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 58 \**Makins, Charles* .  
 59 \**Marshall, Arthur* .  
 60 \**Marshall, John* .  
 66 Marshall, Reginald Dykes Castlerigg Manor, Keswick.  
 67 Marshall, V. A. E., B.A. . Monk Coniston, Ambleside.  
 65 The Society .  
 32 Moseley, Miss C. A. . The Lodge, Adel.  
 68 Nunneley, J. A., M.B. . 29, Royal Crescent, Bath.  
 17 Padgett, Frederick A. . Belmont, Burley-in-Wharfedale.  
 21 Plumbley, Robert Dyball. 51, Cardigan Road, Headingley.  
 46 Raynar, Joseph Percival . Tancred, Whixley, York.  
 70 \**Shepherd, John* .  
 10 Streatfeild, Richard James. The Rocks, Uckfield, Sussex.

\* Deceased Members.

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73	Teale, Lionel H.	.	Heathfield Terrace, Far Headingley.
4	Tetley, C. F., M.A.	.	Spring Bank, Headingley.
74	Tottie, Mrs. John William		Cold Coniston, Bell Busk.
76	Ward, Mrs. A. Ellend	.	36, Hyde Terrace.
2	Warde-Aldam, W. W.	.	Frickley Hall, Doncaster.
12	Wilson, Rev. Benjamin	.	Christ Church Vicarage, Mirfield
78	Wilson, Edmund, F.S.A.	.	10, Louis Street.
30, 31, } 33, 54 }	Wilson, Richard (4 shares)		Westfield, Armley.
62	Wilson, Reginald A.	.	Fulwood, Moorland Drive, Moor-Allerton.
16	Wilson, Mrs. Robert L.	.	21, Lyddon Terrace.
40, 41, 69	Wood, William Hoffman (3 shares)	.	8, Queen Square.

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Subscription of One Guinea.*

There are 65 Shares : 62 Members.

47	Airedale, The Rt. Hon. Lord	.	Gledhow Hall.
92	Barran, Alfred	.	Moor House, Headingley.
119	Barrett, Albert	.	Cliff Lawn, Hyde Park.
17	Beaumont, James	.	21, Bond Street, Leeds.
91	Bedford, James E., F.G.S.	.	Shireoak Road, Headingley.
87	Bickersteth, The Rev. Dr.	.	The Vicarage, Leeds.
121	Blackburn, Henry G.	.	2, East Parade.
10	Bowling, John	.	Newstead House, Spencer Place.
49	Braithwaite, William	.	Throstle Nest, Horsforth.
6	Brown, G. W.	.	78, Belsize Park Gardens, Hampstead, London, N.W.
5	Brown, Miss	.	Barden Grange, Headingley.
37	Bulmer, Miss	.	Blenheim Lodge.

\* Deceased Members.



NEW PROPRIETARY MEMBERS—*continued.*

1	Burrell, Benjamin A., F.I.C.	8, Springfield Mount.
86	Carter, Mrs. E. G.	Elm House, Chapel Allerton.
77	Clark, Mrs. E. Kitson	Meanwoodside, Headingley.
39	Crowther, Mrs. H.	Brudenell Mount, Headingley.
26	Elliot, Douglas	Atlas Chambers, King Street.
118	Flitch, John R.	Moortown.
3	Ford, Gervase Lawson	61, Albion Street.
32	Garforth, W. E., LL.D., M.Inst.C.E., F.G.S.	Snydale Hall, near Pontefract.
84	Grant, Prof. A. J., M.A.	21, Burton Crescent.
7	Hargrove, Rev. C., M.A.	Falconberg, Harrogate.
16	Harvey, William	The Grove, Roundhay.
4	Hodges, Isaac	Bovey Court, Vereeniging, Transvaal.
98	<i>*Howgate, William</i>	.
74	Howgate, Wm. Arthur	21, Blenheim Terrace.
53	<i>*Hudson, Robert</i>	.
56	James, Christopher Wm.	Pen-y-Bryn, Chapel-Allerton.
33	Kendall, Prof. P. F., M.Sc., F.G.S.	The University, Leeds.
46	Kitson, Robert Hawthorn, M.A.	Elmet Hall, Leeds.
48	Kitson, Mrs. F. W.	Burley Hill, Leeds.
12	Kitson, Sydney D., M.A., F.R.I.B.A.	Hillside, Gledhow.
90	Lawson, Frederick W.	Oaklands, Adel.
21	Lupton, Oliver	Lyndhurst, North Grange Road, Headingley.
95	Lupton, Arthur Greenhow, M.A., LL.D.	Springwood, Roundhay.
8	Lupton, Henry	Courtlands, Chelston, Torquay.
99	Lupton, Hugh	The Acacias, Roundhay.
55	Lupton, Mrs. John	Moorlands, Headingley.
63, } 100 }	Lupton, Fras. Martineau, M.A. (2 shares)	Rockland, Newton Park.

\* Deceased Members.

NEW PROPRIETARY MEMBERS—*continued.*

94	Malcolm, John Cooper	Brighton Villa, New Leeds.
89	* <i>March, Henry</i>	
58	March, Miss R. E.	Beech Grove House.
60	* <i>Marshall, Thomas, M.A.</i>	
27	Maude, William Henry	Middleton Lodge, Leeds.
117	Middleton, Mrs. Arthur	Moor Grange, Moor Road, Headingley.
72	Middleton, Robert	Sheepscar Foundry, Leeds.
30	Nicholson, Marshall	Middleton Hall, near Leeds.
68	Oxley, James Walker	Spensfield, Weetwood.
113	Parsons, Walter	City Training College, Head- ingley.
11	Pegler, Thos. Boyne	Woodville, Newton Park.
93	Phillips, J. S. R.	55, Albion Street.
105	Ryder, Miss	Beaconhill, Scarcroft.
120	Scattergood, Bernard, M.A., M.I.E.E.	Moorside, Moor Rd., Headingley.
54	Schüddekopf, Prof. A. W., M.A., Ph.D.	32, Springfield Mount.
80	Smith, Arthur I. E., F.R.G.S.	63, Albion Street.
29	Smith, H. Senior	10, East Parade.
57	Stringer, John William	Inglebank, Far Headingley.
51	Talbot, Grosvenor	Southfield, Burley
73	Teale, T. P., M.A., D.Sc., F.R.S.	North Grange, Headingley.
69	Vaughan, Prof. C. E., M.A.	
41	Webb, Joseph S.	3, Park Place.
83	Wicksteed, J. H., Past- President Inst.M.E., M.Inst.C.E.	Weetwood Croft, Far Headingley.
31	Wilkinson, William M.	Brecondone, St. Mary's Road.
24	Wynne-Edwards, Rev. J. R., M.A.	The Grammar School, Leeds.

\* Deceased Members.

## NEW ORDINARY MEMBERS,

*being Owners of New Ordinary Shares of £20 each, with an Annual Subscription of One Guinea.*

There are 35 Shares : 35 Members.

- |    |   |   |
|----|---|---|
| 34 | Allerton, The Rt. Hon.<br>Lord, LL.D., F.R.S. | Allerton Hall, Leeds.                       |
| 48 | Barran, Rowland H., M.P.                      | Beechwood, Roundhay.                        |
| 4  | Barwick, J. M.                                | Low Hall, Yeadon.                           |
| 5  | Bedford, James E., F.G.S.                     | Arncliffe, Shireoak Road.                   |
| 40 | Bodington, Lady                               | Woodbourne, North Hill Road,<br>Headingley. |
| 10 | Bousfield, Charles Edward                     | Kingsbridge, Devon.                         |
| 77 | Bragg, Prof. W. H., M.A.,<br>F.R.S.           | Rosehurst, Grosvenor Road,<br>Headingley.   |
| 7  | Branson, F. W., F.I.C.                        | Wynneholme, Far Headingley.                 |
| 72 | Brigg, Matthew A.                             | Dock Ing Mills, Batley.                     |
| 11 | Briggs, Riley                                 |   |
| 33 | Denison, Samuel                               | Spenthorn, West Park.                       |
| 18 | Dodgson, Aquila                               | Southleigh, Headingley.                     |
| 82 | Draper, Rev. W. H., M.A.                      | The Rectory, Adel.                          |
| 65 | Eddison, Octavius, B.A.                       |   |
| 20 | Eddison, Mrs. R.W., LL.D.                     | Stairfoot, Adel.                            |
| 22 | Fairley, Thomas, F.R.S.E.                     | 8, Newton Grove.                            |
| 25 | Garstang, Prof. Walter,<br>M.A., D.Sc.        | 2, Ridge Mount, Headingley.                 |
| 25 | Goodman, Prof. John,<br>M.Inst.C.E.           | The University, Leeds.                      |
| 60 | Harland, J. W.                                | 64, Otley Road, Headingley.                 |
| 78 | Hawkesworth, Edwin                            | Sunnyside, Crossgates.                      |
| 28 | Hepper, John                                  | Clareville, Headingley.                     |
| 30 | Hobson, Alfred                                | The Gables, North Park Avenue,<br>Roundhay. |
| 6  | Jackson, Richard                              | 11, Spring Road, Headingley.                |
| 58 | Lambert, J. Vollans,<br>L.D.S.Eng., F.Z.S.    | 3a, Hillary Place.                          |
| 63 | Lidderdale, E. W., B.A.                       | Bank of England.                            |

NEW ORDINARY MEMBERS—*continued.*

45	March, George	. Oaklands, Scarcroft.
46	Middleton, Gilbert	. Calverley Chambers, Victoria Sq.
70	Moorman, Prof. F. W., B.A., Ph.D.	. 2, Hollin Lane, Far Headingley.
55	Nussey, Mrs. S. L.	. Potternewton Hall.
26	Ramsden, Arthur	. 20, Cemetery Place, Woodhouse Lane.
73	Rowley, Walter, M.Inst.C.E., F.S.A., F.G.S.	. Alder Hill, Meanwood.
76	Smithells, Prof. A., B.Sc., F.R.S.	. 29, Moor Road, Far Headingley.
85	Wallis, Edwin Cooper, M.I.E.E.	. 90, Potternewton Lane, Chapel-Allerton.
57	Ward, George, F.C.S.	. Buckingham Ter., Headingley.
47	Whitmell, C. T., M.A., B.Sc., F.R.A.S.	. Invermay, Headingley.

## ANNUAL SUBSCRIBERS OF ONE GUINEA.

Albrecht, Mrs.	. Springwood Road, Roundhay.
Barker, Walter N.	. 14, Brandon Grove, Newton Park.
Bartholomew, W. H., M.Inst.C.E.	. Ridge Way House.
Bedford, Charles S.	. Rocella, Weetwood.
Bingham, F.	. Wayside, Lidgett Park, Roundhay.
Birch, Prof. de Burgh, C.B., M.D., C.M., F.R.S.E.	. 8, Osborne Terrace, Virginia Rd.
Booth, William	. Longfield, Rodley.
Boyce, Frank	. 7, Whitehorse Street.
Braithwaite, J. E.	. 6, South Parade.
Braithwaite, Mrs.	. Kirkstall Lane, Headingley.
Bray, Arthur	. Meriden, West Park, Headingley.
Bray, Miss Florence	. Causeway House, Adel.
Brotherton, Ed. Allen	. Roundhay.
Brown, Richard H.	. Wellington Street.

ANNUAL SUBSCRIBERS OF ONE GUINEA—*continued.*

Cameron, J. S., B.Sc., M.D.	. 27, Regent Park Terrace.
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Clark, Miss	. Potternewton.
Connal, Prof. B. M., M.A.	. 29, Wood Lane.
Crampton, Charles	. Cromer Hall.
Croft, E. O., M.D.	. 28, Clarendon Road.
Croysdale, Charles	. 102, Cardigan Road, Headingley.
Croysdale, Miss	. Westfield, Chapel-Allerton.
Dawson, E. W.	. 63, Victoria Road.
Dufton, S. F., M.A., D.Sc.	. Laurel Bank, Claremont Road, Headingley.
Firth, W.	. North Hill Road, Headingley.
Fisher, J. Greevz	. 78, Harrogate Road, Chapel- Allerton.
Foster, George	. Castlestead, Boston Spa.
Gill, L. W.	. Ingram Road Council School.
Gillespie, C. M., M.A.	. 6, Hollin Lane, Headingley.
Green, John H.	. Horbury, near Wakefield.
Green, Miss	. 1, Tanfield Place.
Griffith, Prof. T. Wardrop, M.D.	. 43, Park Square.
Grisdale, W.	. 88, Francis Street, Chapeltown.
Hannam, William Simpson	. 4, East Parade.
Harper, Alfred	. Eccleshill, near Bradford.
Hastings, G.	. 23, Oak Lane, Bradford.
Hepworth, H. M.	. Lincombe, North Hill Road, Headingley.
Hudleston, W. H.	. Wither Lodge, Kirkstall.
James, Chas. Hy.	. Holzendorff, Grange View, Chapeltown.
Johnson, Rev. Herbert, M.A.	. All Souls' Vicarage.
Jones, Fk. W.	. Cardigan Villa, Grove Lane, Headingley.

ANNUAL SUBSCRIBERS OF ONE GUINEA—*continued.*

Jowett, Charles	. 78, Albion Street.
Keenan, Miss	. 2, Woodlands, Weetwood Lane.
Kitson, Fk. J.	. Gledhow Grove, Chapel-Allerton.
Lawson, Sir Arthur T., Bart.	. Bedale.
Littlewood, Prof. H., M.Sc., F.R.C.S.	Park Square.
Mozley, J. R., M.A.	. 1, Holly Bank, Far Headingley.
Newill, Frank	. 9, Kelso Road.
Oldfield, Carlton, M.D., M.R.C.P.	. Cleveland House, Cardigan Road.
Peate, Jonathan	. Guiseley.
Pope, H. Barrett	. Gaythorne House, Roundhay Rd.
Richardson, W. W.	. Aldingham, Park View Crescent, Roundhay.
Roberts, Prof. W. Rhys, Litt.D., LL.D.	13, St. Michael's Crescent, Headingley.
Robinson, Edmund, M.D.	. 42, Park Square.
Roebuck, W. Denison, F.L.S.	. 259, Hyde Park Road.
Rogers, Prof. L. J., M.A., Mus.Bac.	The University, Leeds.
Schofield, Wm.	. Southfield House, Clarendon Rd.
Sharp, Gordon, M.D.	. 9, Cavendish Road.
Simpson, E. O.	. East Parade.
Stanley, Mrs. S. Scott	. Grove House, North Lane, Roundhay.
Sykes, Arthur	. Roundhay Grange.
Thornber, W.	. 68, Avenue Hill, Harehills Lane.
Thomas, P. D.	. Rose Bank, Allerton Park, Chapel-Allerton.
Wager, H. W. T., F.R.S.	. Hendre, Horsforth Lane, Far Headingley.
Wilkinson, J. J.	. Burnside, Skipton.
Williamson, H. L.	. Burton Lea, Headingley.
Wilson, D'Arcy B.	. Seacroft.
Wood, Thomas	. 11, Quarry Mount, Woodhouse.

# ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS AND SIXPENCE.

Albrecht, Miss M.	. Springwood Road, Roundhay.
Barber, Miss	. 161, Victoria Road.
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Barford, Miss	. Grammar School Endowment. Headingley.
Barker, Mrs. Walter N.	. 14, Brandon Grove, Newton Park.
Barrie, Miss	. Grammar School Endowment. Headingley.
Barrie, Miss M. C.	. Grammar School Endowment, Headingley.
Bedford, Mrs. C. S.	. Rocella, Weetwood.
Branson, Mrs. F. W.	. Wynneholme, Far Headingley.
Bray, Mrs. Arthur	. Meriden, West Park, Headingley.
Burrell, W. W.	. Boys' Modern School.
Cameron, Mrs.	. 27, Regent Park Terrace.
Campbell, Mrs.	. 27, Weetwood Lane.
Carter, Mrs. J. W.	. Shirley Dene, Brentwood Grove.
Cobb, Miss H.	. Thoresby School.
Cowling, G. H., B.A.	. 60, Lofthouse Place.
Croysdale, Mrs. C.	. 102, Cardigan Road.
Dale, F. R., B.A.	. The Grammar School.
Dawson, Miss E. M.	. 63, Victoria Road, Headingley.
Dufton, Mrs. S. F.	. Laurel Bank, Claremont Road, Headingley.
Everett, J. H.	. Cockburn High School.
Favell, Miss M. L.	. 72, Caledonian Road.
Foster, Mrs. George	. Castlestead, Boston Spa.
Garforth, Miss	. Snydale Hall, near Pontefract.
Grant, Mrs.	. 21, Burton Crescent.
Green, Miss Ethel	. 1, Tanfield Place.
Grant, C. H., M.Sc.	. 212, Burley Road.
Griffith, Mrs. T. Wardrop	. 43, Park Square.
Hannam, Mrs. W. S.	. 4, East Parade.
Harmer, F. G.	. Muscoates, Kirkstall Lane.

ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS  
AND SIXPENCE—*continued.*

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James, Mrs.	. Holzendorff, Grange View, Chapelton.
James, Miss	. Holzendorff, Grange View, Chapelton.
Jones, Mrs. F. W.	. Cardigan Villa, Grove Lane, Headingley.
Kelsey, H. T.	. The Grammar School.
Kent, J. J. P.	. The Grammar School.
King, H.	. Cockburn High School.
Kitson, Mrs. F. J.	. Gledhow Grove, Chapelton.
Lebour, Miss M. V., M.Sc.	. The University, Leeds.
Lowe, Miss L. A., M.A.	. Grammar School Endowment, Headingley.
Mannaberg, Miss L.	. The Hollies, Weetwood.
Montague, Miss A. E.	. 21, Cavendish Road.
Moorman, Mrs.	. 2, Hollin Lane, Far Headingley.
Moss, Miss E.	. 218, Harehills Avenue.
Murphy, Miss O.	. 2, Springfield Mount.
Murphy, Miss B.	. Do. do.
Murphy, Miss D.	. Do. do.
Nelson, Miss C. E.	. 34, Hyde Terrace.
Nelson, Miss Louisa	. Do.
Netherwood, Miss	. Grove House, North Lane, Roundhay.
Newill, Miss Amy	. 9, Kelso Road.
North, Miss F. C.	. 1, Virginia Road.
Oldroyd, W. L.	. West Hill Road, Chapelton.
Ratcliffe, Miss C. F.	. Roundhay.
Richardson, Mrs. H., B.A.	. Aldingham, Park View Crescent, Roundhay.
Robertson, Miss H., B.A.	. The University.
Russell, Miss	. 11, Victoria St., Chapel-Allerton.
Ryder, Miss Louisa	. Beaconhill, Scarcroft.



ANNUAL SUBSCRIBERS OF SEVEN SHILLINGS  
AND SIXPENCE—*continued.*

Scoular, Miss A. J. M.	. 41, Harlech Terrace.
Serpell, H. W., M.A.	. The Grammar School.
Simpson, Mrs. E. O.	. East Parade.
Staveley, Miss	. 14, Brandon Grove, Roundhay.
Teale, Miss	. North Grange, Headingley.
Thomas, Mrs. P. D.	. Rosebank, Allerton Park, Chapel-Allerton.
Thomson, Miss, M.A.	. University Hall, De Grey Road.
Tyas, J. W.	. 19, Claremont Avenue.
Wager, Mrs. H. W. T., B.A.	. Hendre, Horsforth Lane, Far Headingley.
Walker, Miss, D.L., M.A.	. Grammar School, Endowment, Headingley
Walker, Mrs. N.	. 60, Chapel Lane, Headingley.
Ward, Mrs. G.	. Buckingham Terrace, Heading- ley.
Williamson, Mrs. H. L.	. Burton Lea, Headingley.
Wigham, Leonard	. 18, Woodland Park Road, Headingley.
Wood, Mrs.	. 11, Quarry Mount, Woodhouse.
Wood, Miss	. Do. do.
Wynne-Edwards, Miss	. The Grammar School.

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*Members and Subscribers are requested to inform the Curator of any errors that may be found in the above list.*

## HONORARY MEMBERS.

Professor Sir T. Clifford Allbutt,  
K.C.B., M.D., F.R.S., Cambridge.

[Elected 1889].

The Right Hon. Lord Avebury,  
D.C.L., LL.D., F.R.S., High  
Elms, Hayes, Kent.

[Elected 1883].

Prof. Graham Bell, The National  
Telephone Company, Milk  
St., Boston, Mass., U.S.A.

[Elected 1883].

Wm. Hancock, F.L.S., F.R.G.S.,  
c/o Commissioner of Customs,  
Kowloon, Hong Kong, China.

[Elected 1892].

Wm. Hartley, Overport House,  
Durban, Port Natal.

[Elected 1863].

Sir Clements R. Markham,  
K.C.B., F.R.S., F.L.S., Pres.  
R.G.S., 21, Eccleston Square,  
Pimlico, London, S.W.

[Elected 1877].

Sir Charles Nicholson, Bart.,  
D.C.L., &c., The Grange,  
Totteridge, Hertfordshire.

[Elected 1862].

Sir A. W. Rücker, Kt., D.Sc.,  
LL.D., F.R.S., 19, Gledhow  
Gardens, London.

[Elected 1889].

Sir T. E. Thorpe, C.B., D.Sc.,  
LL.D., Ph.D., F.R.S., Imperial  
College of Science and  
Technology, South Kensington,  
London.

[Elected 1887].



